

Table VIII.2. Estimated Total Impacts to Businesses from Both Annualized Non-Recurring and Annual Recurring Costs

Code	Category	Estimated # Products Non-compliant	Number of Manufacturers/Marketers with Noncompliant Products in Each Product Category	Estimated Annual Costs, Dollars Per Year (Includes Recurring and Nonrecurring) For a Typical Business In the Product Category			Estimated Annual Costs, Dollars Per Year (Includes Recurring and Nonrecurring) For All Businesses In the Product Category		
				Low Cost	High Cost	Mid Cost	Low Cost	High Cost	Mid Cost
2208	Automotive Windshield Washer Fluids	58	30	\$2,654	\$34,027	\$18,340	\$79,622	\$1,020,799	\$550,211
2202	Automotive Brake Cleaners	82	26	\$7,582	\$58,757	\$33,170	\$197,132	\$1,527,694	\$862,413
2203	Carburetor, Choke Cleaners	79	28	\$9,505	\$54,627	\$31,568	\$238,135	\$1,529,563	\$883,649
2204a	Engine Degreasers (Aerosols)	41	35	\$4,078	\$23,086	\$13,582	\$142,714	\$807,995	\$475,354
2204b	Engine Degreasers (non-Aerosols)	13	7	\$2,601	\$33,350	\$17,975	\$18,209	\$233,447	\$125,828
2208	The Infiller and Sealant	11	9	\$40,280	\$59,817	\$50,033	\$362,246	\$538,350	\$450,289
	Total	283	135				\$1,038,058	\$5,657,847	\$3,347,952
1104	Household Care	54	18	\$34,303	\$98,828	\$60,565	\$817,445	\$1,582,905	\$1,090,175
5502	Construction, Panel, and Flooring Adhesives	23	13	\$87,457	\$98,164	\$92,810	\$876,937	\$1,276,131	\$1,076,534
5405	Furniture Maintenance Products (Aerosols)	40	15	\$12,398	\$58,819	\$35,508	\$185,944	\$879,281	\$532,813
5202a	General Purpose Cleaners (Dilutables)	66	27	\$4,755	\$47,554	\$28,155	\$128,396	\$1,283,957	\$708,177
5202b	General Purpose Cleaners (Ready-to-Use)	73	28	\$58,447	\$104,219	\$61,333	\$1,838,503	\$2,818,126	\$2,277,314
5203a	General Purpose Degreasers (Ready-to-Use)	80	30	\$5,214	\$52,136	\$28,675	\$156,409	\$1,564,094	\$860,251
5203b	G.P. Degreaser/Solvent Parts Cleaner (Aerosol)	72	21	\$9,670	\$68,699	\$38,684	\$140,068	\$1,400,681	\$770,374
5203c	General Purpose Degreasers (Ready-to-Use)	12	10	\$8,686	\$28,876	\$18,171	\$88,663	\$298,765	\$191,714
5204a	Glass Cleaners (Dilutables)	61	29	\$4,105	\$41,054	\$22,580	\$119,058	\$1,190,579	\$654,818
5204b	Glass Cleaners (Ready-to-Use, Non-Aerosol)	84	41	\$4,441	\$44,412	\$24,427	\$182,089	\$1,820,885	\$1,001,487
1201	Sealant and Caulking Compounds	122	21	\$11,339	\$113,388	\$62,364	\$238,116	\$2,381,157	\$1,309,837
	Total	697	253				\$4,367,628	\$16,574,561	\$10,471,094
6402	Personal Care	118	27	\$12,754	\$59,756	\$41,255	\$344,350	\$1,883,401	\$1,113,876
5503	Nail Polish Remover	42	16	\$4,178	\$38,532	\$21,355	\$66,851	\$816,512	\$341,681
	Total	160	43				\$411,201	\$2,499,913	\$1,455,557
4305	Pesticides	59	18	\$40,431	\$299,481	\$169,956	\$727,754	\$5,390,663	\$3,059,208
4302	Crawling Bug Insecticides (Aerosols)	43	16	\$27,785	\$241,898	\$134,842	\$444,565	\$3,870,378	\$2,167,471
4304	Flying Insect Insecticide (Aerosols)	22	6	\$18,044	\$161,078	\$88,561	\$98,285	\$968,470	\$531,367
	Total	124	40				\$1,268,584	\$10,227,508	\$5,748,046
	Grand Total	1,264				TOTAL	\$7,085,471	\$34,959,830	\$21,022,650

Notes: Number of Manufacturers/Marketers with noncompliant products taken from 1997 ARB Survey for all categories except for windshield washer fluid, which was estimated from Frost & Sullivan, "Automotive Functional Fluids Aftermarket Participants," 5/3/99

Table VIII-5. Estimated Total Annualized Non-Recurring Fixed Cost to Comply with Proposed Standards

Code	Category	Proposed Limit	Estimated # Products Non-compliant (A)	Estimated Total One-Time Cost to Reformulate Per Product (dollars)		Estimated Annualized Cost to Reformulate Per Product (dollars per year)		Estimated Annualized Fixed Cost to Reformulate All Non-Compliant Products (dollars per year)	
				Low (B0)	High (B1)	Low (B2 = B0 x CRF)	High (B3 = B1 x CRF)	Low (A x B2)	High (A x B3)
2208	Automotive Care								
2202	Automotive Windshield Washer Fluids	1%	58	\$8,476	\$108,659	\$1,379	\$17,685	\$79,822	\$1,020,799
2203	Automotive Brake Cleaners	45%	82	\$8,476	\$108,659	\$1,379	\$17,685	\$112,564	\$1,443,128
2204a	Carburetor, Choke Cleaners	45%	79	\$8,476	\$108,659	\$1,379	\$17,685	\$109,253	\$1,400,681
2204b	Engine Degreasers (Aerosols)	35%	41	\$8,476	\$108,659	\$1,379	\$17,685	\$56,282	\$721,963
2205	Engine Degreasers (Non-Aerosols)	5%	13	\$8,476	\$108,659	\$1,379	\$17,685	\$18,209	\$233,447
2206	The Inlet and Sealant	20%	11	\$8,476	\$108,659	\$1,379	\$17,685	\$14,898	\$191,002
		SUM =	283					\$390,828	\$5,010,817
1104	Household Care								
5602	Construction, Panel, and Flooring Adhesives	15%	54	\$11,954	\$119,538	\$1,945	\$19,454	\$105,051	\$1,050,511
5405	Double-Phase Aerosol Air Freshener	20%	23	\$11,954	\$119,538	\$1,945	\$19,454	\$44,355	\$443,549
5202a	Furniture Maintenance Products (Aerosols)	17%	40	\$11,954	\$119,538	\$1,945	\$19,454	\$77,037	\$770,374
5202b	General Purpose Cleaners (Dilutables)	1%	66	\$11,954	\$119,538	\$1,945	\$19,454	\$128,396	\$1,283,957
5203a	General Purpose Cleaners (Ready-to-Use)	3%	73	\$11,954	\$119,538	\$1,945	\$19,454	\$142,403	\$1,424,025
5203b	General Purpose Degreasers (Dilutables)	1%	80	\$11,954	\$119,538	\$1,945	\$19,454	\$156,409	\$1,564,094
5203c	General Purpose Degreasers (Ready-to-Use)	3%	72	\$11,954	\$119,538	\$1,945	\$19,454	\$140,068	\$1,400,681
5204a	3-P. Degreaser/Solvent Parts Cleaner (Aerosol)	50%	12	\$11,954	\$119,538	\$1,945	\$19,454	\$23,345	\$233,447
5204b	Glass Cleaners (Dilutables)	1%	61	\$11,954	\$119,538	\$1,945	\$19,454	\$119,058	\$1,190,579
5204c	Glass Cleaners (Ready-to-Use, Non-Aerosol)	4%	84	\$11,954	\$119,538	\$1,945	\$19,454	\$182,089	\$1,820,885
5204d	Sealant and Caulking Compounds	4%	122	\$11,954	\$119,538	\$1,945	\$19,454	\$238,116	\$2,381,157
		SUM =	697					\$1,356,328	\$13,563,289
4002	Personal Care								
5903	Hair Mousse	6%	118	\$8,780	\$90,195	\$1,592	\$14,879	\$187,182	\$1,726,233
	Nail Polish Remover	0%	42	\$8,780	\$90,195	\$1,592	\$14,879	\$68,651	\$616,512
		SUM =	160					\$254,033	\$2,342,745
4305	Pesticides								
4302	Crawling Bug Insecticides (Aerosols)	15.00%	59	\$62,593	\$549,865	\$10,187	\$89,488	\$598,982	\$5,261,891
4304	Flying Insect Insecticide (Aerosols)	25.00%	43	\$62,593	\$549,865	\$10,187	\$89,488	\$440,058	\$3,965,879
	Lawn and Garden Insecticides (Non-Aerosol)	3.00%	22	\$27,385	\$274,932	\$4,457	\$44,744	\$96,285	\$966,470
		SUM =	124					\$1,135,315	\$10,094,240
								\$3,136,502	\$31,010,861

Notes:
 # Noncompliant Products = Market Adj. x (# Noncompliant Products in Survey)
 with windshield washer fluid market adj. of 2.22 and all others 1.2

1999 Chemical Engineering Plant Cost Index = 388.6 (Prelim 4/99)
 1991 Chemical Engineering Plant Cost Index = 357.6 (Final 1991)

Market Adjustment = 1.2
 (used to estimate total number of non-comp. products in CA)

Discount Rate = 10.00%
 Project Horizon, yrs = 10
 Cost Recovery Factor = 0.16275 (CRF)

Table VIII-6. Estimated Cost-Effectiveness for Proposed Standards

Code	Category	Typical Non-compliant VOC Content (A)	Proposed Limit (B)	Estimated # Products Non-compliant (C)	1997 Emission Reduction (t/day) (D)	Estimated Reformulation Costs (in 1998 dollars)				Estimated Cost Effectiveness (in 1998 dollars)			
						Annualized Non-Reforming Cost (Low/E1)	High/E2	Annual Reforming Cost (Low/E1)	High/E2	Low (G1=(E1+F1))	High (G2=(E2+F2))	Avg. (G1+G2)/2	
2208	Automotive Windshield Washer Fluids	5%	1%	58	7,420	\$0.00	\$0.02	(\$0.04)	(\$0.04)	(\$0.04)	(\$0.04)	\$0.00	
2202	Automotive Brake Cleaners	50%	45%	82	0.310	\$0.06	\$0.83	\$0.37	\$0.37	\$0.44	\$1.20	\$0.82	
2203	Carburetor, Choke Cleaners	75%	45%	79	2.190	\$0.01	\$0.11	\$0.08	\$0.08	\$0.09	\$0.19	\$0.14	
2204a	Engine Degreasers (Aerosols)	50%	35%	41	0.370	\$0.03	\$0.35	\$0.32	\$0.32	\$0.35	\$0.67	\$0.51	
2204b	Engine Degreasers (non-Aerosols)	40%	5%	13	0.050	\$0.06	\$0.83	(\$0.56)	(\$0.56)	(\$0.49)	\$0.27	\$0.00	
2206	The Inflator and Sealant	35%	20%	11	0.320	\$0.01	\$0.11	\$1.49	\$1.49	\$1.50	\$1.59	\$1.54	
					283	10,680						\$0.12	
Household Care													
1104	Construction, Panel, and Flooring Adhesives	27%	15%	54	0.440	\$0.04	\$0.43	\$1.60	\$1.60	\$1.64	\$2.02	\$1.83	
5602	Disposable Aerosol Air Freshener	30%	20%	23	1.540	\$0.01	\$0.05	\$0.74	\$0.74	\$0.75	\$0.79	\$0.77	
5405	Furniture Maintenance Products (Aerosols)	25%	17%	40	0.350	\$0.04	\$0.39	\$0.43	\$0.43	\$0.47	\$0.82	\$0.64	
5202a	General Purpose Cleaners (Dilutables)	3%	1%	68	0.410	\$0.06	\$0.59	(\$3.25)	(\$4.47)	(\$3.19)	(\$3.92)	\$0.00	
5202b	General Purpose Cleaners (Ready-to-Use)	5%	3%	73	1.050	\$0.02	\$0.24	\$1.95	\$2.92	\$1.97	\$3.17	\$2.57	
5203a	General Purpose Degreasers (Dilutables)	5%	1%	80	0.410	\$0.07	\$0.68	(\$1.25)	(\$2.00)	(\$1.18)	(\$1.32)	\$0.00	
5203b	General Purpose Degreasers (Ready-to-Use)	22%	3%	72	0.850	\$0.03	\$0.29	\$0.45)	\$0.29)	(\$0.42)	(\$0.00)	\$0.30	
5203c	G.P. Degreaser/Solvent Parts Cleaner (Aerosol)	100%	50%	12	0.360	\$0.01	\$0.12	\$0.24	\$0.24	\$0.25	\$0.36	\$0.30	
5204a	Glass Cleaners (Dilutables)	4%	1%	61	0.620	\$0.03	\$0.28	(\$0.47)	(\$0.47)	(\$0.45)	(\$0.22)	\$0.00	
5204b	Glass Cleaners (Ready-to-Use, Non-Aerosol)	5%	4%	94	0.360	\$0.09	\$0.90	(\$0.60)	(\$0.60)	(\$0.51)	\$0.30	\$0.00	
1201	Sealant and Caulking Compounds	35%	4%	122	0.790	\$0.05	\$0.54	(\$0.24)	(\$0.40)	(\$0.18)	\$0.14	\$0.00	
Personal Care													
3402	Hair Mousse	15%	6%	118	0.330	\$0.10	\$0.93	\$0.65	\$1.62	\$0.75	\$2.56	\$1.65	
3503	Nail Polish Remover	35%	0%	42	0.470	\$0.03	+\$0.23	(\$0.17)	(\$0.21)	(\$0.14)	\$0.02	\$0.00	
Pesticides													
4305	Crawling Bug Insecticides (Aerosols)	20%	15%	59	0.490	\$0.22	\$1.91	\$0.36	\$0.36	\$0.58	\$2.27	\$1.43	
4302	Flying Insect Insecticide (Aerosols)	35%	25%	43	0.110	\$0.71	\$6.28	\$0.06	\$0.06	\$0.77	\$6.31	\$3.54	
4304	Lawn and Garden Insecticides (Non-Aerosol)	5%	3%	22	0.350	\$0.05	\$0.49	(\$0.21)	(\$0.21)	(\$0.16)	\$0.28	\$0.06	
Grand Tot.					1,284	20						\$1.17	

- (1) - Avg Cost-Effectiveness shown as "\$0.00" means the average of the low and high cost-effectiveness for the category was either 0 or negative.
- (2) ERWA = emission reduction-weighted average
- (3) Cost-effectiveness values in "Y" are negative (i.e., indicates potential cost savings)
- (4) Non-recurring fixed costs annualized by multiplying with the Cost Recovery Factor (CRF)
- (5) "Products Non-Compliant" (Column C) and "Emission Reductions" (Column D) reflect 1997 Mid-Term Survey results adjusted for market coverage of the survey.
- (6) For non-recurring costs, "low" and "high" refer to ranges of estimated fixed costs as shown in Section VIII, for recurring costs, "low" and "high" refer to "All Other" ingredients assumed to cost \$3.50/lb and \$7.00/lb, respectively (in 1998 dollars), unless otherwise noted in individual category cost spreadsheets

California-to-National Cost Adjustment Factor = 0.13

Table VII-10. Estimated Per-Unit Cost Increases from Both Annualized Non-Recurring and Annual Recurring Costs

Code	Category	Sales-Mid Average VOC Content, % (A)	Estimated VOC Emissions, lbs/day (B)	Typical Unit Weight (C)	Estimated Unit Sales Per Day In Calif. (D)	Annualized Nonrecurring Cost/Unit (E)		Estimated Per Unit Production Cost Increase		Total Increase		
						Low Cost/Unit (E1)	High Cost/Unit (E2)	Annual Recurring Low Cost/Unit (F1)	Annual Recurring High Cost/Unit (F2)	Total Increase Low/Unit (G1=(E1+F1))	Total Increase High/Unit (G2=(E2+F2))	Total Increase Mid/Unit (G1+G2)/2
2208	Automotive Care	5.0%	8.30	133	39,940	\$0.00	\$0.01	\$0.00	\$0.00	\$0.00	\$0.01	\$0.00
2202	Automotive Brake Cleaners	42.0%	5.80	13	32,821	\$0.00	\$0.02	\$0.02	\$0.02	\$0.02	\$0.03	\$0.02
2203	Carburetor, Choke Cleaners	67.0%	6.46	13	23,807	\$0.00	\$0.02	\$0.02	\$0.02	\$0.02	\$0.04	\$0.03
2204a	Engine Degreasers (Aerosols)	34.0%	1.67	13	12,090	\$0.00	\$0.02	\$0.04	\$0.04	\$0.04	\$0.05	\$0.05
2204b	Engine Degreasers (non-Aerosols)	1.0%	0.08	13	19,692	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2208	The Initiator and Sealant	21.0%	0.89	18	7,534	\$0.00	\$0.01	\$0.25	\$0.25	\$0.25	\$0.26	\$0.26
Household Care												
1104	Construction, Panel, and Flooring Adhesives	22.0%	1.00	13	11,189	\$0.00	\$0.03	\$0.16	\$0.16	\$0.16	\$0.19	\$0.17
5602	Domestic-Phase Aerosol Air Freshener	30.0%	4.67	9	54,163	\$0.00	\$0.00	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04
5405	Furniture Maintenance Products (Aerosols)	20.0%	1.98	12.5	25,344	\$0.00	\$0.01	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03
5202a	General Purpose Cleaners (Aerosols)	5.8%	4.77	6.6	308,543	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5202b	General Purpose Cleaners (Ready-to-Use)	2.0%	3.18	10.5	484,571	\$0.00	\$0.00	\$0.03	\$0.04	\$0.03	\$0.04	\$0.03
5203a	General Purpose Degreasers (Dilutables)	6.2%	0.84	23	21,197	\$0.00	\$0.03	\$0.00	\$0.00	\$0.03	\$0.04	\$0.03
5203b	General Purpose Degreasers (Ready-to-Use)	22.0%	0.95	12.3	11,234	\$0.00	\$0.04	\$0.00	\$0.00	\$0.00	\$0.04	\$0.02
5203c	G.P. Degreaser/Solvent Parts Cleaner (Aerosol)	97.0%	0.73	15	1,605	\$0.01	\$0.05	\$0.11	\$0.11	\$0.11	\$0.16	\$0.13
5204a	Glass Cleaners (Dilutables)	2.0%	1.21	17	113,882	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5204b	Glass Cleaners (Ready-to-Use, Non-Aerosol)	5.0%	2.27	23	63,165	\$0.00	\$0.01	\$0.00	\$0.00	\$0.00	\$0.01	\$0.01
1201	Sealant and Calking Compounds	3.0%	1.87	13	153,436	\$0.00	\$0.01	\$0.00	\$0.00	\$0.00	\$0.01	\$0.00
Personal Care												
7402	Wax Moustases	9.0%	0.76	8	33,776	\$0.00	\$0.02	\$0.03	\$0.07	\$0.03	\$0.09	\$0.09
2903	Nail Polish Remover	21.0%	0.47	8	11,937	\$0.00	\$0.02	\$0.00	\$0.00	\$0.00	\$0.02	\$0.01
Pesticides												
4305	Creeking Bug Insecticides (Aerosols)	28.0%	3.61	13	33,495	\$0.01	\$0.06	\$0.01	\$0.01	\$0.02	\$0.07	\$0.05
4302	Flyng Insecticide (Aerosols)	30.0%	0.6	13	4,923	\$0.03	\$0.28	\$0.00	\$0.00	\$0.04	\$0.28	\$0.18
4304	Lawn and Garden Insecticides (Non-Aerosol)	1.0%	1.35	13	332,308	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Notes:					SUM	1,798,654						
(1) (E) = Total Annualized Non-recurring Cost / ((D) * 365)												
(2) Figures in "F" are negative (i.e., indicates potential cost savings)												
MIN UNIT COST INCREASE						\$0.00						\$0.00
MAX UNIT COST INCREASE						\$0.28						\$0.28
SVA-UNIT COST INCREASE						\$0.02						\$0.02